

CLAIMS

What is claimed is:

- 1 1. A method for wireless communications at a user equipment (UE),
2 comprising:
3 detecting a radio link failure condition for a connection between the UE and a
4 network over a first cell group;
5 determining, in response to detecting the radio link failure condition, whether
6 an air interface resource allocation is available for a signaling radio bearer (SRB) between the
7 UE and the network over another cell group; and
8 selecting, based at least in part on the determination, one of a plurality of radio
9 link failure procedures.
- 1 2. The method of claim 1, further comprising:
2 identifying a type of the first cell group as one of: a controlling cell group
3 (CCG) or a non-controlling cell group (NCCG); and
4 wherein selecting one of the plurality of radio link failure procedures is further
5 based on the type of the first cell group.
- 1 3. The method of claim 1, wherein selecting one of the plurality of radio
2 link failure procedures further comprises:
3 selecting a first radio link failure procedure in response to determining that the
4 air interface resource allocation for the SRB between the UE and the network over the
5 another cell group is not available; and
6 performing the first radio link failure procedure, wherein the first radio link
7 failure procedure comprises a full release of radio resources between the UE and the network.
- 1 4. The method of claim 3, wherein performing the first radio link failure
2 procedure further comprises:
3 suspending all radio bearers of the UE; and
4 resetting media access control (MAC) settings of the UE.
- 1 5. The method of claim 3, wherein performing the first radio link failure
2 procedure further comprises one or more of:

3 releasing all secondary cells (SCells) associated with the first cell group; or;
4 and
5 releasing all other cell groups associated with the connection.

1 6. The method of claim 1, wherein selecting one of the plurality of radio
2 link failure procedures comprises:
3 selecting a second radio link failure procedure in response to determining that
4 the air interface resource allocation for the SRB between the UE and the network is available
5 over a second cell group; and
6 performing the second radio link failure procedure, wherein the second radio
7 link failure procedure comprises a partial release of radio resources between the UE and the
8 network.

1 7. The method of claim 6, wherein performing the second radio link
2 failure procedure further comprises:
3 transmitting an indication of the radio link failure condition to the another cell
4 group using the SRB.

1 8. The method of claim 6, wherein the SRB comprises one of a split SRB
2 associated with the first cell group and the second cell group or an SRB configured on the
3 second cell group.

1 9. The method of claim 6, wherein performing the second radio link
2 failure procedure further comprises one or more of:
3 suspending all data radio bearers (DRBs) associated with the first cell group;
4 suspending transmissions on resources of the first cell group; and
5 resetting a media access control (MAC) entity corresponding to the first cell
6 group.

1 10. The method of claim 1, wherein the connection is associated with
2 signaling radio bearers comprising one or more of a direct SRB, a split SRB, a direct data
3 radio bearer (DRB), and a split DRB.

1 11. The method of claim 1, wherein determining whether the air interface
2 resource allocation is available further comprises:

3 determining that the air interface resource allocation is not available when an
4 SRB is not configured for a radio link control (RLC) or a media access control (MAC) on the
5 another cell group; or

6 determining that the air interface resource allocation is not available when a
7 resource allocation for the SRB is not activated on the another cell group.

1 12. An apparatus for wireless communications at a user equipment (UE),
2 comprising:
3 a processor,
4 memory coupled with the processor; and
5 instructions stored in the memory and executable by the processor to cause the
6 apparatus to:
7 detect a radio link failure condition for a connection between the UE
8 and a network over a first cell group;
9 determine, in response to detecting the radio link failure condition,
10 whether an air interface resource allocation is available for a signaling radio bearer
11 (SRB) between the UE and the network over another cell group; and
12 select, based at least in part on the determination, one of a plurality of
13 radio link failure procedures.

1 13. The apparatus of claim 12, wherein the instructions are further
2 executable by the processor to cause the apparatus to:
3 identify a type of the first cell group as one of: a controlling cell group (CCG)
4 or a non-controlling cell group (NCCG); and
5 wherein selecting one of the plurality of radio link failure procedures is further
6 based on the type of the first cell group.

1 14. The apparatus of claim 12, wherein the instructions to select one of the
2 plurality of radio link failure procedures further are executable by the processor to cause the
3 apparatus to:
4 select a first radio link failure procedure in response to determining that the air
5 interface resource allocation for the SRB between the UE and the network over another cell
6 group is not available; and

7 perform the first radio link failure procedure, wherein the first radio link
8 failure procedure comprises a full release of radio resources between the UE and the network.

1 15. The apparatus of claim 14, wherein the instructions to perform the first
2 radio link failure procedure further are executable by the processor to cause the apparatus to:
3 suspend all radio bearers of the UE; and
4 reset media access control (MAC) settings of the UE.

1 16. The apparatus of claim 14, wherein the instructions to perform the first
2 radio link failure procedure further comprises one or more of: are executable by the processor
3 to cause the apparatus to:
4 release all secondary cells (SCells) associated with the first cell group; or
5 release all other cell groups associated with the connection.

1 17. The apparatus of claim 12, wherein the instructions to select one of the
2 plurality of radio link failure procedures are executable by the processor to cause the
3 apparatus to:
4 select a second radio link failure procedure in response to determining that the
5 air interface resource allocation for the SRB between the UE and the network is available
6 over a second cell group; and
7 perform the second radio link failure procedure, wherein the second radio link
8 failure procedure comprises a partial release of radio resources between the UE and the
9 network.

1 18. The apparatus of claim 17, wherein the instructions to perform the
2 second radio link failure procedure further are executable by the processor to cause the
3 apparatus to:
4 transmit an indication of the radio link failure condition to the second cell
5 group using the SRB.

1 19. The apparatus of claim 17, wherein the SRB comprises one of a split
2 SRB associated with the first cell group and the second cell group or an SRB configured on
3 the second cell group.

1 20. The apparatus of claim 17, wherein the instructions to perform the
2 second radio link failure procedure further are executable by the processor to cause the
3 apparatus to:
4 suspend all data radio bearers (DRBs) associated with the first cell group;
5 suspend transmissions on resources of the first cell group; and
6 reset a media access control (MAC) entity corresponding to the first cell
7 group.

1 21. The apparatus of claim 12, wherein the connection is associated with
2 signaling radio bearers comprising one or more of a direct SRB, a split SRB, a direct data
3 radio bearer (DRB), and a split DRB.

1 22. The apparatus of claim 12, wherein the instructions to determine
2 whether the air interface resource allocation is available further are executable by the
3 processor to cause the apparatus to:
4 determine that the air interface resource allocation is not available when an
5 SRB is not configured for a radio link control (RLC) or a media access control (MAC) on the
6 another cell group; or
7 determine that the air interface resource allocation is not available when a
8 resource allocation for the SRB is not activated on the another cell group.

1 23. An apparatus for wireless communications at a user equipment (UE),
2 comprising:
3 means for detecting a radio link failure condition for a connection between the
4 UE and a network over a first cell group;
5 means for determining, in response to detecting the radio link failure
6 condition, whether an air interface resource allocation is available for a signaling radio bearer
7 (SRB) between the UE and the network over another cell group; and
8 means for selecting, based at least in part on the determination, one of a
9 plurality of radio link failure procedures.

1 24. The apparatus of claim 23, further comprising:
2 means for identifying a type of the first cell group as one of: a controlling cell
3 group (CCG) or a non-controlling cell group (NCCG); and

4 means for selecting one of the plurality of radio link failure procedures is
5 further based on the type of the first cell group.

1 25. The apparatus of claim 23, wherein the means for selecting one of the
2 plurality of radio link failure procedures further comprises:

3 means for selecting a first radio link failure procedure in response to
4 determining that the air interface resource allocation for the SRB between the UE and the
5 network over another cell group is not available; and

6 means for performing the first radio link failure procedure, wherein the first
7 radio link failure procedure comprises a full release of radio resources between the UE and
8 the network.

1 26. The apparatus of claim 25, wherein the means for performing the first
2 radio link failure procedure further comprises:

3 means for suspending all radio bearers of the UE; and

4 means for resetting media access control (MAC) settings of the UE.

1 27. The apparatus of claim 25, wherein the means for performing the first
2 radio link failure procedure further comprises one or more of: comprises:

3 means for releasing all secondary cells (SCells) associated with the first cell
4 group; or

5 means for releasing all other cell groups associated with the connection.

1 28. The apparatus of claim 23, wherein the means for selecting one of the
2 plurality of radio link failure procedures comprises:

3 means for selecting a second radio link failure procedure in response to
4 determining that the air interface resource allocation for the SRB between the UE and the
5 network is available over a second cell group; and

6 means for performing the second radio link failure procedure, wherein the
7 second radio link failure procedure comprises a partial release of radio resources between the
8 UE and the network.

1 29. The apparatus of claim 28, wherein the means for performing the
2 second radio link failure procedure further comprises:

3 means for transmitting an indication of the radio link failure condition to the
4 second cell group using the SRB.

1 30. The apparatus of claim 28, wherein the SRB comprises one of a split
2 SRB associated with the first cell group and the second cell group or an SRB configured on
3 the second cell group.

1 31. The apparatus of claim 28, wherein the means for performing the
2 second radio link failure procedure further comprises:
3 means for suspending all data radio bearers (DRBs) associated with the first
4 cell group;
5 means for suspending transmissions on resources of the first cell group; and
6 means for resetting a media access control (MAC) entity corresponding to the
7 first cell group.

1 32. The apparatus of claim 23, wherein the connection is associated with
2 signaling radio bearers comprising one or more of a direct SRB, a split SRB, a direct data
3 radio bearer (DRB), and a split DRB.

1 33. The apparatus of claim 23, wherein the means for determining whether
2 the air interface resource allocation is available further comprises:
3 means for determining that the air interface resource allocation is not available
4 when an SRB is not configured for a radio link control (RLC) or a media access control
5 (MAC) on the another cell group; or
6 means for determining that the air interface resource allocation is not available
7 when a resource allocation for the SRB is not activated on the another cell group.

1 34. A non-transitory computer-readable medium storing code for wireless
2 communications at a user equipment (UE), the code comprising instructions executable by a
3 processor to:
4 detect a radio link failure condition for a connection between the UE and a
5 network over a first cell group;
6 determine, in response to detecting the radio link failure condition, whether an
7 air interface resource allocation is available for a signaling radio bearer (SRB) between the
8 UE and the network over another cell group; and

9 select, based at least in part on the determination, one of a plurality of radio
10 link failure procedures.

1 35. The non-transitory computer-readable medium of claim 34, wherein
2 the instructions are further executable to:
3 identify a type of the first cell group as one of: a controlling cell group (CCG)
4 or a non-controlling cell group (NCCG); and
5 wherein selecting one of the plurality of radio link failure procedures is further
6 based on the type of the first cell group.

1 36. The non-transitory computer-readable medium of claim 34, wherein
2 the instructions to select one of the plurality of radio link failure procedures are further
3 executable to:
4 select a first radio link failure procedure in response to determining that the air
5 interface resource allocation for the SRB between the UE and the network over another cell
6 group is not available; and
7 perform the first radio link failure procedure, wherein the first radio link
8 failure procedure comprises a full release of radio resources between the UE and the network.

1 37. The non-transitory computer-readable medium of claim 36, wherein
2 the instructions to perform the first radio link failure procedure are further executable to:
3 suspend all radio bearers of the UE; and
4 reset media access control (MAC) settings of the UE.

1 38. The non-transitory computer-readable medium of claim 36, wherein
2 the instructions to perform the first radio link failure procedure are further executable to:
3 release all secondary cells (SCells) associated with the first cell group; or
4 release all other cell groups associated with the connection.

1 39. The non-transitory computer-readable medium of claim 34, wherein
2 the instructions to select one of the plurality of radio link failure procedures are further
3 executable to:
4 select a second radio link failure procedure in response to determining that the
5 air interface resource allocation for the SRB between the UE and the network is available
6 over a second cell group; and

7 perform the second radio link failure procedure, wherein the second radio link
8 failure procedure comprises a partial release of radio resources between the UE and the
9 network.

1 40. The non-transitory computer-readable medium of claim 39, wherein
2 the instructions to perform the second radio link failure procedure are further executable to:
3 transmit an indication of the radio link failure condition to the second cell
4 group using the SRB.

1 41. The non-transitory computer-readable medium of claim 39, wherein
2 the SRB comprises one of a split SRB associated with the first cell group and the second cell
3 group or an SRB configured on the second cell group.

1 42. The non-transitory computer-readable medium of claim 39, wherein
2 the instructions to perform the second radio link failure procedure are further executable to:
3 suspend all data radio bearers (DRBs) associated with the first cell group;
4 suspend transmissions on resources of the first cell group; and
5 reset a media access control (MAC) entity corresponding to the first cell
6 group.

1 43. The non-transitory computer-readable medium of claim 34, wherein
2 the connection is associated with signaling radio bearers comprising one or more of a direct
3 SRB, a split SRB, a direct data radio bearer (DRB), and a split DRB.

1 44. The non-transitory computer-readable medium of claim 34, wherein
2 the instructions to determine whether the air interface resource allocation is available are
3 further executable to:
4 determine that the air interface resource allocation is not available when an
5 SRB is not configured for a radio link control (RLC) or a media access control (MAC) on the
6 another cell group; or
7 determine that the air interface resource allocation is not available when a
8 resource allocation for the SRB is not activated on the another cell group.